

July 15, 2011



Illinois Environmental Protection Agency
Permit Section
Bureau of Land – #33
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: 2018080001 – Winnebago County
Winnebago Landfill
Annual Groundwater Flow Evaluation—2010-2011

Dear Agency Representative:

Pursuant to Condition VIII.20 of Permit No. 1991-138-LF, Modification 46, submitted herein is the facility groundwater flow evaluation. The condition states that annually, the operator shall prepare an evaluation of the groundwater flow direction and the hydraulic gradients at the facility using the groundwater surface elevations determined for each monitoring event. The groundwater flow has been evaluated for the past four quarters (third quarter 2010 through second quarter 2011). Potentiometric surface maps for each of the referenced quarters are provided herein.

If you have any questions regarding this notification, please contact Tom Hilbert at (815) 963-7516.

Sincerely,



Teresa N. Sharp
Environmental Scientist

TNS:tns:slm

Enclosure

cc: Tom Hilbert – Winnebago Reclamation
Bernie Schorle – US EPA Region 5

ANNUAL GROUNDWATER FLOW EVALUATION

WINNEBAGO LANDFILL – PERMIT NO. 1991-138-LF

2018080001 – WINNEBAGO COUNTY

In accordance with Condition VIII.20 of Permit No. 1991-138-LF, Modification 46, an evaluation of the groundwater flow and hydraulic gradients for the Northern and Southern Units of Winnebago Landfill has been completed for third and fourth quarters of 2010 and first and second quarters of 2011. The attached potentiometric surface maps illustrate the general groundwater flow direction and gradients for the Northern and Southern Units. Also shown in the attached potentiometric maps is the North Expansion Unit (NEU). The NEU is currently being constructed and operated under a separate Permit No. (2006-221-LF). A separate Annual Groundwater Flow Evaluation has been submitted for Permit No. 2006-221-LF and, therefore, details of the flow regime for that unit are not presented within this evaluation. The unit is shown on the potentiometric surface maps because it monitors the same aquifer system as the Northern and Southern Units of Winnebago Landfill and provides a complete illustration of the groundwater flow characteristics.

The potentiometric surface data used in construction of the contour maps were obtained from both shallow and deep wells, as the screen intervals are located within deposits that are hydraulically connected.

One hydraulic gradient has been calculated for each quarter; originating from an upgradient location at G09M to a downgradient location at G40S. Based on the distance between the selected wells and the change in groundwater elevation, the steepest gradient is represented. The gradient becomes very flat in areas surrounding Killbuck Creek, illustrated by greater distances between contours.

The gradient from G09M to G40S ranged from 0.011834 to 0.014269 during the four quarters of this review. The average gradient for the four quarters was calculated as 0.01287. The gradient is shown on each potentiometric surface map illustrating the flow path used to determine the values.

Based on the evaluation of groundwater flow, the existing monitoring well network is appropriate to adequately monitor the facility groundwater. Therefore, no modifications to the monitoring well network are necessary.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
SOLID WASTE REPORTING FORM

This form must be used as a cover for the following list of notices and reports required by the Illinois EPA's Bureau of Land, Permit Section. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form must be used for Solid Waste facilities only. Reporting for Hazardous Waste facilities should be submitted on a separate Hazardous Waste Reporting Form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form may NOT be used for any request to modify the permit, sampling or operating procedures. Modification requests must be submitted separately in the form of a permit application.

This form is not to be used with permit applications. Your permit will state whether the document you are submitting is required as a report or an application.

Facility Name: Winnebago Landfill - Northern and Southern Units

Site ID#: 2018080001

Check one of the following, identifying the contents of your submittal:

- ☐ LPC-160 Forms
- | | |
|---|---|
| <input type="checkbox"/> Quarterly Groundwater Data | <input type="checkbox"/> Semi-Annual Groundwater Data |
| <input type="checkbox"/> Quarterly Leachate Data | <input type="checkbox"/> Semi-Annual Leachate Data |
| <input type="checkbox"/> Annual Groundwater Data | <input type="checkbox"/> Biennial Groundwater Data |
| <input type="checkbox"/> Annual Leachate Data | <input type="checkbox"/> Biennial Leachate Data |
- ☒ Annual Groundwater Flow Evaluation
- ☐ Well Survey Data
- ☐ Well Construction Forms and Boring Logs
- ☐ Well Abandonment Forms
- ☐ Notice of Observed Increase in Groundwater
- Notice of Intent to Perform Confirmation Procedures (Re-sampling) in Groundwater
- ☐ Notice of Confirmed Increase of Groundwater Exceedence from Re-sample
- ☐ Notice of Methane Exceedences
- ☐ Annual Facility Report (per 35 Ill. Adm. Code 813.504) and Gas Monitoring Report
- ☐ Annual Certifications per 35 Ill. Adm. Code 813.501
- ☐ Other (identify): Not to be used for Permit Applications